

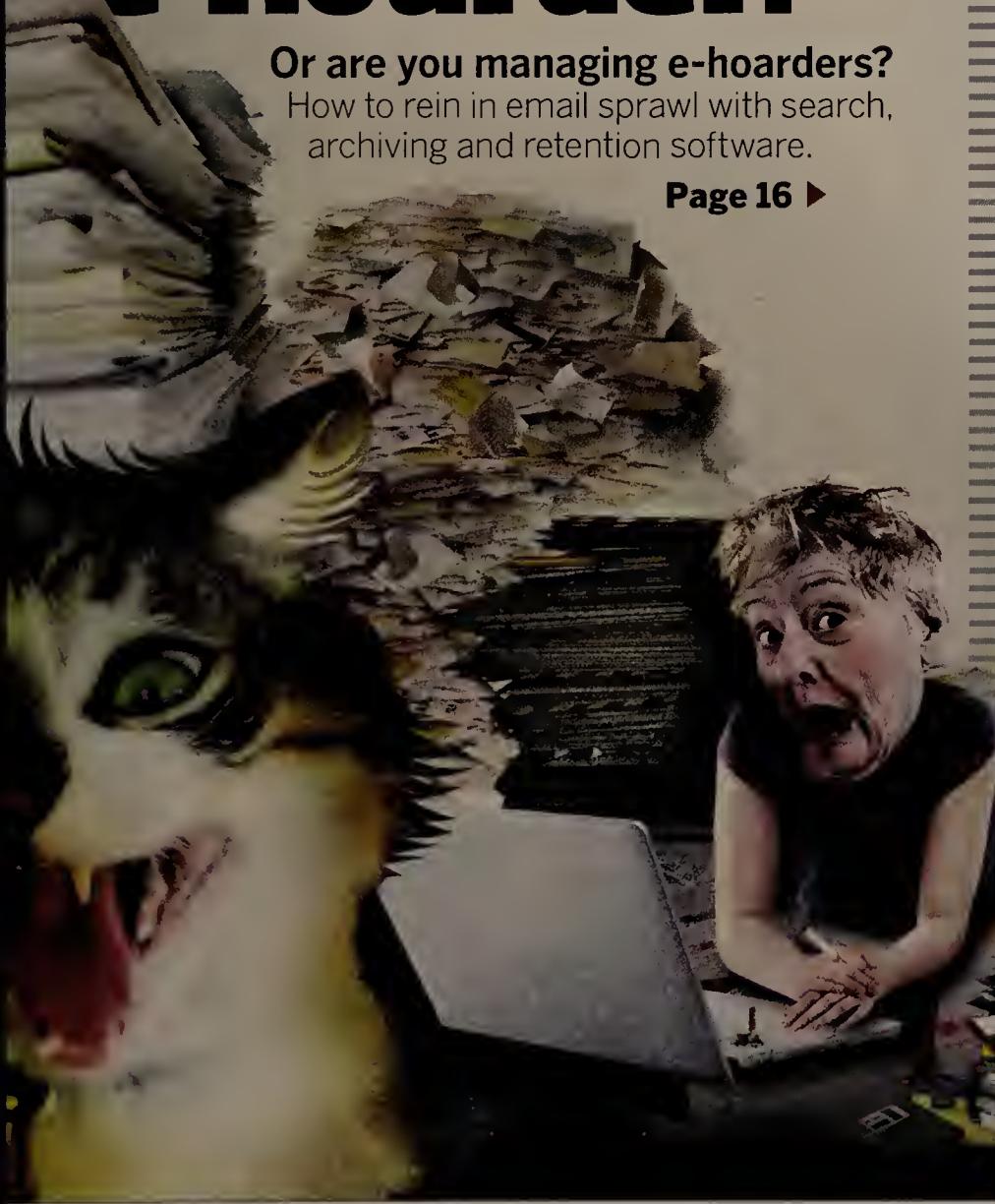
NETWORK WORLD

THE CONNECTED ENTERPRISE ■ MARCH 12, 2012

Are you an e-hoarder?

Or are you managing e-hoarders?
How to rein in email sprawl with search,
archiving and retention software.

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IT pros like new iPad, eye iOS 5.1 warily

BY JOHN COX

THE NEW third-generation Apple iPad is generally a hit with a sampling of enterprise IT professionals surveyed by *Network World*. All like the greatly enhanced display, the graphics processing and 4G LTE wireless support.

But a few were hoping for a bigger processing boost or one of several specific features, a number of which Apple seems unlikely to ever deliver (like support for Adobe Flash Web content). And several noted that the real locus for enterprise benefits, and problems, lies in the latest update to the iOS firmware (release 5.1 for the new iPad), about which Apple has had little to say publicly.

Dubbed simply the "new iPad," Apple's latest tablet features double the screen resolution of the iPad 2 and four times the pixels at 2048 x 1536, a slightly beefed up dual-core CPU (the A5X) with a new quad-core graphics processor,

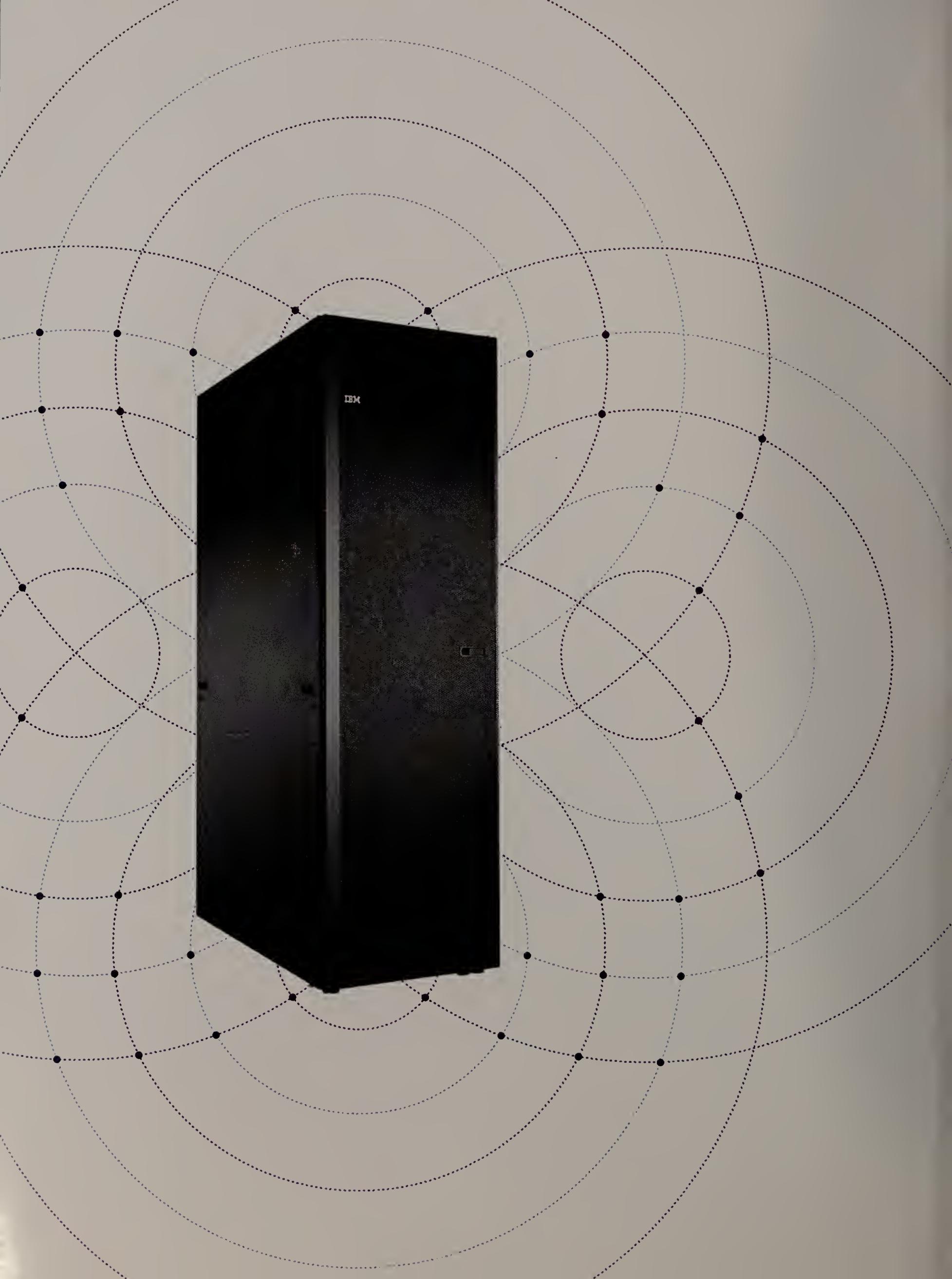
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MARCH 12, 2012

FROM THE EDITOR | JOHN DIX

SaaS seeds ready to bloom

One expected benefit from the shift to the cloud is the emergence of a refreshing new crop of innovative software suppliers. The enterprise software market, after all, has withered as the biggest developers consolidated control through acquisition. But when the big guys resisted the shift to software-as-a-service for fear of cannibalizing their lucrative maintenance annuities, just enough light got through for thousands of SaaS seedlings to take root.

It's hard to know exactly how many new SaaS companies are growing out there because many startups are staying private longer due to the economy, says Justin Perreault, a general partner at Commonwealth Capital Ventures. But Commonwealth is investing heavily in the category and he's sure the company isn't alone.

In fact, Perreault says SaaS, along with developments in mobility and other corners of the cloud market, is driving a renaissance in venture capital.

"The perception is that the venture world has fallen on hard times because of poor showings over last 10 years," he says. "A lot of capital was incinerated in '01, '02, '03." But it began to turn around in 2004. "When we look back at 2012, we'll say it was a phenomenal year for venture capital."

Timing is everything. While venture money has been flowing into SaaS for 10 years, only in the last year have large enterprises recognized SaaS as the way forward, says Elliot Katzman, another Commonwealth Capital general partner.

"This is the deployment mode of the future," Perreault says. "It will take a while to migrate, but it is clear now that more software tools will go to the cloud than we ever thought possible just a few years ago."

For buyers, SaaS offers the usual benefits of sidestepping upfront costs of premise-based software tools, the need to invest in infrastructure to support the apps, and ongoing management and maintenance headaches. What's more, you know you'll always have the latest product enhancements and updates.

But there is a big upside for SaaS suppliers as well, Perreault and Katzman say. The supplier can monitor usage every day so, if its tool is being underutilized, it can step in to investigate and help the customer address the problem, possibly by upselling the customer on a module that addresses an unforeseen need. With the traditional "install the software and throw the customer the keys" mode, nagging little implementation problems or gaps in training can result, over time, in a product dying on the vine.

A robust crop of new SaaS suppliers will inevitably lead to a round of consolidation, Perreault and Katzman agree, but that is some time off, leaving plenty of time for new ideas to flourish.



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NETWORK WORLD

New iPad: Apple's hits and misses

→ IPAD HAS GOTTERN a lot of enterprise acceptance due to senior executives bringing it inside the company and wanting to use it. The screen's new "wow" factor will accelerate that trend. While PCs were brought into the company by technologists, iPads are coming in from the executives, a fact not really mentioned in this article (Re: "Enterprise IT likes what it sees in new iPad"; tinyurl.com/86znrxr).

iPad is still a consumption device and saying that these announcements make it a creation device is perhaps stretching the truth too far. For now, creation of content will continue to take place on PCs while consumption will occur on mobile devices, with iPad being the most likely winner at this time.

R. Paul Singh

→ I HAVE AN "iPad" — It's called a cell-phone. It does everything the iPad does, with a smaller screen. Of course, it only cost me \$75 (no contract), not \$500-plus (Re: "Why the holdouts aren't buying an iPad 3"; tinyurl.com/86mrtrr).

For the few people that actually need a tablet and are not just mindless consumers, there is no reason to buy an iPad over a competing brand.

Apple is a marketing company, and it does a good job at it.

GS

→ THE COMPANY KNOWN for marketing genius cannot create an unambiguous name. When I get the next-generation iPad, I can still sell this one as "the new iPad." Of course, people will still know the difference because Apple will call the next one "the new new iPad" (Re: "Apple unveils its next iPad"; tinyurl.com/6w4wgyn).

Eric Roberts

→ SIRI, DEFINITELY!!!! UPGRADED though — Siri should be able to read any text (e-books, Web pages, etc.) aloud and translate multiple languages verbally (Re: "4 things we want to see from iPad 4"; tinyurl.com/6pkv8ny).

I would add:

1. Witricity or other built-in wireless charging solution over a distance (not induction).
2. Heptic or other textural feedback for touchscreen (simulated physical keyboard maybe).
3. Pressure sensitivity and palm cancelation for artists, etc. (smart stylus to go with it).
4. Solid waterproofing to a decent depth (more rugged overall).

Guest

Where is the IT talent?

→ I CUT MY teeth on DOS in the '80s. When mainframes began giving way to networks, we specialized. We had server people, desktop people, cable people, router people, firewall people, etc. (Re: "CIOs struggle to find IT talent"; tinyurl.com/73zy2f4).

The applications you see today, they want someone that is wearing four, five or six of those hats. College kids don't have that kind of experience, and we in the 40-50 age range don't want college-kid money or short contract positions.

shirlj63

→ FUNDAMENTALLY THE MAIN issue is that career advice for the young is practically nonexistent or poor. We are not focusing on supporting development throughout the

education process, and therefore gaining the breadth of skills needed for these types of roles is almost impossible to gain in a 1-2 HE course. The truth is that, yes, the staff with these skills are those who have been around many roles in various technical guises. So where we should be focusing on today, is how we can support career advice at an early age to ensure we end up with younger entry-level staff who can then be mentored and supported by those with the experience.

There are solutions and we have them, but the issue is that unless there is a wider consensus to use them, only small groups will benefit from them.

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Contestants hack the heck out of Chrome

DUELING BROWSER-EXPLOIT CONTESTS at the CanSecWest conference yielded immediate results — two hacks against Google Chrome — with contestants in both competitions demonstrating exploits within an hour. In the Chrome Pwnium contest, run by Google, Sergey Glazunov's exploit preyed on two vulnerabilities to avoid the Chrome sandbox that is supposed to mitigate exploits. His efforts won him \$60,000. In Pwn2Own, French consulting company Vupen took down the browser with a zero-day exploit that used a flaw in the browser itself and also

broke out of the browser's sandbox. The exploit won the five-man Vupen team

32 points in the competition. Pwn2Own is sponsored by the Zero Day Initiative and HPTippingPoint. First prize is \$60,000, second is \$30,000 and third is \$15,000, depending on which team accumulates the most points. tinyurl.com/7jre87x

New Cisco servers have Intel Xeon E5 inside

CISCO HAS expanded its data center portfolio with servers and network gear to better support virtualization, cloud computing and big data demands. The latest Unified Computing System (UCS) servers support Intel's new Xeon processor E5-2600 line — also known as "Romley" and "Sandy Bridge" — and support up to eight times the memory capacity and four times the I/O of previous UCS servers.

In addition, the UCS Manager now supports Cisco's UCS rack mount servers, enabling those form factors to reach management parity with the UCS blade servers. Cisco says it now has 11,000 UCS customers since the platform's introduction in 2009. And at a \$1.3 billion annual run rate, UCS is the fastest growing product in Cisco's history. tinyurl.com/7jwhxpe

Enterprises going social

ENTERPRISES, IT seems, are

getting a bit more social. Large companies are increasingly letting employees access social media sites from the office, Gartner says. While 50% of large organizations blocked social sites in 2010, Gartner expects that number to drop to 30% by 2014. "Even in those organizations that block all access to social media, blocks tend not to be complete," said Andrew Walls, a Gartner analyst. "Certain departments and processes, such as marketing, require access to external social media, and employees can circumvent blocks by using personal devices such as smartphones." tinyurl.com/88s8zhr

IT VIDEO

Touring the 787 Dreamliner aircraft

Boeing stopped in Boston with its new 787 Dreamliner aircraft, and gave us a tour. Japan Airlines will offer nonstop service with the 787 from Boston to Tokyo starting in April. tinyurl.com/89t4vq7

exchanger through which water is pumped at low pressure. Iceotope can cool an entire 20kW rack with a pump consuming just 70 watts, according to Iceotope CTO Peter Hopton. The Iceotope system warms the water by just 5 degrees Celsius, and can operate with incoming water temperatures of up to 45 C, which means year-round free-air cooling is possible almost anywhere on the planet, he said. tinyurl.com/78epd78



QA internship program targets young adults

A GROUP of U.S. technology companies has launched an IT internship program aimed at helping low-income young people get a start in the industry through quality assurance jobs. Backers of the new SummerQamp program hope to get commitments from tech companies to provide more than 1,000 QA internships this summer. Many software QA jobs have been outsourced to other countries, but the program is an attempt to grow those jobs in the U.S., said Kevin Haggard, vice president of quality engineering at online clothing retailer Gilt Groupe. "We need to create more tech jobs and keep the U.S. at the forefront of innovation," he said. "People don't realize this is a very viable career opportunity." Among the companies joining Gilt Groupe in supporting the program are GroupMe, a group-messaging software vendor; Onswipe, a publishing app developer; and eBay. Also supporting the effort are Aneesh Chopra, former CTO at the U.S. White House, and musician Jon Bon Jovi. tinyurl.com/888b4lm

Brocade provides single view across access layer

BROCADE IS looking to simplify the campus edge with two additions to its ICX switch line and plans to more easily mix and match ICX switches in and between stacks. The stacking capability, which Brocade calls HyperEdge, is designed to let users manage their entire access switching layer as if it were a single device, and provide consistent policy among all access layer ports. Users can mix and match

high-end and entry-level switches within a single stack, so entry-level switches inherit all of the features of the high-end switches, Brocade says. HyperEdge will be available on Brocade's ICX and FCX stackable switches through a software upgrade available in the first half of next year. In the meantime, Brocade unveiled two new stackable ICX switches that feature, among other capabilities, support for Energy Efficient Ethernet and MACsec link-level encryption. The switches are available in 24-port and 48-port Gigabit Ethernet models, with optional 1G/10G uplink or stacking ports to support up to 384 ports of density. tinyurl.com/6t4g8h2

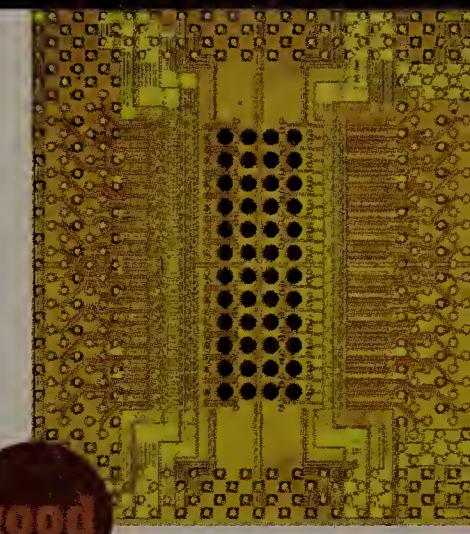


More devices, less satisfied

AS SMARTPHONES and tablets surge in number, mobile workers are less satisfied with their wireless network services, a new poll from iPass has found. The global survey of 1,800 workers at 1,100 companies found a 25 percentage point decline in mobile network satisfaction compared to a year ago. In 2011, 87% of workers said they were satisfied with their mobile service, while the number dropped to 62% who are satisfied in 2012. The survey also noted that workers carry an average of 3.5 devices, up from 2.7 devices in 2011. iPass and other experts attribute the decline in satisfaction to the mismatch of increased device capabilities and the fact that wireless infrastructure has not kept up with demand. tinyurl.com/7ynysg6

IBM researchers claim Terabit breakthrough

IBM RESEARCHERS have developed a prototype optical chip that can transfer data at 1Tbps, the equivalent of downloading 500 high-definition movies, using light pulses. The chip, called Holey Optochip, is a parallel optical transceiver consisting of both a transmitter and a receiver, and is designed to handle the large amount of data created and transmitted over corporate and consumer networks as a result of new applications and services. It is expected to power future supercomputer and data center applications, an area where IBM already uses optical technology.



GOOD

CIOs ask: Where's the IT talent?

NEW SURVEY data finds it's tougher to recruit skilled professionals in the tech field than it is in other professional



areas, including accounting and finance, legal, and advertising and marketing departments. Compared to their counterparts in other employment sectors, more CIOs say recruiting is a challenge, according to Robert Half International. The staffing services firm polled 4,000 U.S. executives — including CIOs, chief financial officers, senior HR managers, lawyers, and advertising and marketing executives — to determine their hiring plans for Q2.

Even the Pope isn't safe from Anonymous

THE MAIN website of the Vatican was inaccessible Wednesday after what appears to have been an attack by malicious hackers claiming to be affiliated with the Anonymous hacking collective. A website claiming to be the official blog of Anonymous in Italy posted a message taking credit for the attack. A rough Google translation of the message suggests that the site was taken down to protest church doctrine and the molestation of children by clergy members. Separately, hackers claiming to belong to Anonymous also defaced Panda Security's PandaLabs website in apparent response to the arrests of five hackers Tuesday in the U.K. and the U.S.

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Identity management in the cloud emerges as hot-button issue for CIOs

BY CAROLYN DUFFY MARSAN

AS SALLIE Mae migrates some of its most important applications to the cloud, the nation's largest provider of college loans is keeping an eye on compliance.

Sallie Mae uses identity management software from SailPoint to ensure that its 6,100 employees have appropriate levels of access to data and applications — regardless of whether it's stored in the cloud or at one of its data centers.

"All of our cloud-based services — all of that access is controlled," says Jerry Archer, CSO for Sallie Mae, which uses hosted applications such as Workday for human resources functions. "SailPoint keeps track of roles, access and other workflow processes."

Sallie Mae is in good company. A growing number of organizations including CUNA Mutual Group and the American Red Cross have upgraded their identity and access management (IAM) tools to bolster their security posture as they adopt cloud-based applications.

Identity management in the cloud has become a hot-button issue for CIOs over the last year, says Lina Liberti, vice president of security management at the security business unit for CA Technologies.

"Every customer I talk to is looking at identity management," Liberti says. "There are a lot of very large deals. ... Companies say they have something that they built that they really shouldn't be managing and it's costing them so much money."

By purchasing the latest IAM tools from such vendors as SailPoint, Courion, IBM, CA, Ping Identity, Aveksa and others, these organizations are ensuring that their employees and business partners have appropriate levels of access to corporate data that's stored by popular cloud-based applications such as Salesforce, Google Apps or Microsoft Office 365.

Today's IAM tools mitigate risks for IT departments by allowing them to comply with federal regulations and successfully pass audits of cloud and network-based applications. They also increase efficiency by eliminating error-prone manual processes for checking access to applications. Increasingly, they offer automated provisioning and de-provisioning of cloud-based applications, as well as single sign-on across network-based and hosted applications.

"Identity access management is a market

5 signs that you've lost control over your cloud apps

End users start sticking Post-it notes all over their computers listing user names and passwords for cloud-based applications.

Employees leave the company, but their access to cloud-based applications isn't removed, resulting in a proliferation of so-called "orphan accounts."

Managers are no longer approving data access for new employees.

Nobody is monitoring cloud-based applications to make sure access is current.

You're losing accounts to the new employer of a salesperson who left your company.

in transition," says Dave Fowler, COO at Courion. "Corporations are opening up more and more of their data to be accessed by employees, business partners, customers and people outside the organization. This is particularly true in financial institutions, healthcare and retail. But in conjunction with opening up more of their data to be used by business partners, they're facing more and more regulations on securing this information."

As IT departments adopt cloud-based applications to cut their operating costs and speed up the availability of new features, they're also dealing with a flood of personal mobile devices that employees are using to access corporate data stored in the cloud.

"We did a survey of 1,000 organizations, and 69% of them allowed personal mobile devices to access their network," Fowler says. "They don't have security over the devices used to access data in the cloud, and they are typically using dozens of cloud-based applications."

Today's IAM tools help IT departments manage the conflicting pressures of trying to secure data that is stored by someone else — a hosted service provider — and accessed by a device that's not owned or controlled by

the company. IAM tools also help manage the constant churn of employees being hired and fired by an organization and its business partners.

"When you put an application in the cloud, you don't have mechanisms for provisioning users in the cloud automatically," Fowler says. "When you terminate an employee or the employee changes jobs, somebody has to manually go into these cloud-based applications and take them out. We're building connectors to applications that allow you to automate onboarding and offboarding individuals."

The latest development is the availability of IAM as a hosted service from such companies as Courion and Lighthouse Security Group. Only a handful of pioneering organizations, such as Cintas Corp. and Molson Coors Brewing Co., have chosen a hosted IAM service. For example, Cintas is going into production mode with the hosted CourionLive service for 30,000 users in March.

Sallie Mae, however, isn't ready to put its identity management system into the cloud.

"We're not at the point where we're putting Active Directory into the cloud. We're maintaining our own Active Directory for employees and customer identity," Archer says. "If you move everything into the cloud, with all identities maintained in the cloud, you've put your crown jewels in the cloud now and you really need to begin worrying about a whole different set of problems in terms of protecting your crown jewels. If hackers get to that, they have everything."

Instead, Sallie Mae is sticking with its network-based version of SailPoint, which it has used for two years. Before that, the company used Excel spreadsheets and a manually intensive process to conduct quarterly reviews of employees' access to information systems.

"We would on a quarterly basis pull all the access logs from the systems and distribute them to the managers to approve," Archer says. "With SailPoint, we've implemented role-based access control. ... No longer do managers have to look at spreadsheets and individual access."

Archer says Sallie Mae has reduced the amount of resources related to compliance by 40% in the last two years, thanks to tools like SailPoint.

"All of this work was very manual with spreadsheets," he says. "We've fundamentally changed everything." ■

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Can big data nab network invaders?

Big data brings big hopes about catching stealthy intruders going after sensitive data

BY ELLEN MESSMER

THE BUZZ in security circles about “big data” goes something like this: If the enterprise could only unite its security-related event data with a warehouse of business information, it could analyze this big data to catch intruders trying to steal sensitive information.

This is the security angle to the big data hopes that are rising along with the popularity of vast big data repositories, often based on the open-source scalable software Hadoop, being adopted in enterprises. This is leading to anticipation a new type of “data scientist” job will emerge in IT around Hadoop. Among security professionals and analysts, there’s now talk that big data will also lead to security-focused data scientists who will have the tools and knowledge to pinpoint attacks by stealthy intruders.

Catching cyberthieves in the act across sprawling networks has proven hard to do, and big data is offering new hope. But is it warranted?

Scott Crawford, analyst with consultancy Enterprise Management Associates, thinks so. “Statistical analysts will identify anomalies but not understand the security,” he commented during an analysts panel at the recent RSA Conference in San Francisco on the topic of Big Data and how it can help security.

Crawford predicted eventually there will emerge “a market for security algorithms” for big data. He noted that firms such as Red Lambda and Palantir are tackling this today in math-heavy analysis aimed at spotting anomalies.

The “bad” attacker intent on hiding is an anomaly to the generally “good” behavior of network users inside the network, behind which the attacker often hides, according to some. Today, stealthy attackers are getting past traditional defenses, such as intrusion-prevention systems, firewalls and antivirus, pointed out Gartner analyst Neil MacDonald, who spoke about this during the RSA panel.

These devastating attacks to infiltrate and steal highly sensitive data, sometimes called advanced persistent threats (APT), are driven by human actors able to effectively hide their

malevolent presence within networks. Today, says MacDonald, we just don’t know what “goodness” and “badness” looks like in terms of network activity. “You have to know what goodness looks like” to understand “deviations from goodness,” he points out.

Big data is offering new possibilities for security analysis, which could mean that one type of security tool used today, security information and event management (SIEM), and tools like it that may not properly adhere to that genre, will have to evolve, analysts contend.

To some extent that has started already, says MacDonald, pointing to RSA’s threat-detection product NetWitness and the HP ArcSight SIEM, among others. Some startups, including CrowdStrike, are claiming they will tackle the APT problem in new ways.

But will SIEM evolve to be able to process business-related big data or not? And is the whole idea that business data be added into more traditional SIEM data from a variety of firewalls, servers, IPSS and the like to provide meaningful intelligence on an attacker simply a pleasant illusion?

“People can’t get the answers they want from SIEM tools,” said Forrester analyst John Kindervag. He said something new is going to have to happen, in which SIEM tools might be a part.

Of all the analysts on the RSA panel, Jon Oltsik with Enterprise Strategy Group, appeared the most skeptical that big data is going to be the answer to the APT problem.

“My fear is we’ll capture more data and not know what to do with it,” Oltsik commented. He said chief information security officers in the enterprise today aren’t sold on the idea that big data is going to be a boon to security. “When I talk to CISOs and ask about big data, they laugh,” he commented.

Still, some early adopters of big data security approaches are hopeful.

Zions Bancorporation has set up a massive repository for proactively analyzing a combination of real-time security and business data in order to identify phishing attacks, prevent fraud and ward off hacker intrusions.



“My fear is we’ll capture more data and not know what to do with it.”

JON OLTSIK, ENTERPRISE STRATEGY GROUP ANALYST

Announced in October 2011, it’s based on the Zettaset Data Warehouse, which makes use of Hadoop for data-intensive distributed applications. Preston Wood, chief security officer at Zions, has described it as a way to augment a SIEM tool and look at massive amounts of historical business data for security purposes.

SIEM vendors, including NetIQ, say they know the buzz around big data and security is just beginning.

“This is where SIEM has to go,” said Matt Ulery, director of product management at NetIQ, maker of the SIEM called Sentinel. Ulery said the industry is starting on a path to reinvent SIEM by incorporating business intelligence. Big data could detect what’s out of a normal pattern, says Ulery, noting Sentinel 7.0 does incorporate more context for data.

“But how do you define the good?” Ulery asked, pointing out an attacker “will take over an account, so the question is, is that the employee or the attacker?” He said stealthy attack actions may only pop up for a few seconds at most every day, so the goal is to define the trusted insider from the attacker. Big data may be able to provide a lot of assistance in that.

But Ulery adds that there appear to be many practical reasons why the big data concept for security is going to be faced with obstacles.

One practical obstacle is the current push to put enterprise data into cloud computing, which is making it harder for the traditional SIEM approach, which has been used on premises inside the enterprise network. Another obstacle is that security managers hopeful about big data will be in the position of drawing up data-management strategies and recommendations about something that remains very cutting-edge today. In an era where other corporate issues, such as whether to adopt “bring your own device” for mobile devices, are already a big topic with management, adding big data could be a hard sell. ■

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FEATURE

WARNING YOU MAY BE AN E-HOARDER

Hoarding shows are popular these days. “Hoarders,” “Hoarders: Buried Alive,” “Confessions: Animal Hoarding” and on and on. The images are consistent:

Piles of newspapers
dating back to the Nixon era.
Feral cats skittering behind furniture.
Boxes stacked to the ceilings.
Empty cans of cat food,
beans and soup
scattered
everywhere.

BY JEFF VANCE

Most people know a hoarder. Maybe it's an aunt. Maybe it's the neighbor with a sofa on the front porch and motorcycle parts strewn across the lawn. Or, maybe it's you. Have you taken a look at your email inbox lately? Last time I cleaned out mine, it had sprawled to more than 1,500 messages — and I hadn't neglected my inbox for all that long.

According to The Radicati Group, the typical knowledge worker sends and receives 105 emails each day. Cribbing from Shakespeare, some people are born e-hoarders, some are made, and others have e-hoarding thrust upon them.

Plenty of us have e-hoarding thrust upon us. In regulated industries, e-hoarding is more or less mandated. Delete the wrong email, and you could get your firm in serious trouble — although that doesn't mean you have to store the thing in your inbox indefinitely.

Cheap storage is a key enabler

With computers sold with ever bigger hard drives, e-hoarding doesn't stress storage the way it would have in the past. And why delete, when it may well be cheaper to store? The cost of storage has dropped from about \$9/GB in 2000 to about \$.08/GB today.

If you're a well-paid knowledge worker, the productivity lost while purging old files may well cost your organization more than the bloated storage costs. That is, until it comes time to find something. Powerful search engines like Google create the illusion that information is always at our fingertips.

Enterprise search, though, falls way short of what we're used to with Google. Desktop search is nearly as bad, and email search is like banging flint together to make a fire instead of using a lighter. It's downright primitive.

Elliot Soloway, a professor in the College of Engineering at the University of Michigan, is a self-confessed e-hoarder. Soloway is constantly writing articles for publications, ideas for his classes and entries for his blog. He saves everything. "You never know

when you might want to reuse a paragraph or rescue a nice turn of phrase you never ended up using."

Anything filed in the last week or 10 days, Soloway could find.

Beyond that, finding poorly filed information would often take longer than

re-creating it from scratch. Soloway eventually tamed his e-hoard with X1 Technology's desktop search software. X1 quickly finds information buried in emails, documents and presentations (and its most recent version will search social media sites and webmail, and even search a remote PC from a smartphone).

Now, Soloway says he doesn't need to worry about e-hoarding. Anything he saves is accessible. "In fact, I save more mini-files. I create many small documents with bits and pieces intended for larger projects. I write differently because I don't worry about information getting lost as soon as I close the document."

Universities thrive on unfettered access to reams of information, but most enterprises can't play as fast and loose with data sprawl.

The real cost of data sprawl

While the cost of storing data has dropped significantly, ancillary costs haven't, including data management costs and even costs associated with adding space in data centers and paying for escalating HVAC bills.

Retrieval is another problem, since even the best search tool won't necessarily find data buried in an arcane application. Take SharePoint, for instance. As more people within an organization collaborate through it, the number of documents within SharePoint can spiral out of control.

"When that happens, when SharePoint becomes a de facto Enterprise Content Management system, the performance degrades. Potentially, people will stop using it," says Kelley Lynn Kassa, director of marketing communications for Datawatch, a provider of data mining solutions. "To paraphrase Yogi Berra, 'No one will go there anymore; it will be too crowded.'"

Gartner predicts that enterprise data in all forms will grow 650% in the next five years. In a survey conducted for Oracle, Unisphere Research found that in many organizations stored data is reaching or has already crossed the petabyte threshold.

According to IDC, the world's information now doubles about every year and a half. By the end of 2011, IDC estimates that we will create and replicate 1.8 zettabytes (or 1.8 trillion gigabytes) of information, enough data to fill 57.5 billion 32GB Apple iPads.

Buried alive by documents ... and legal fees

According to Jeff Fehrman, VP of forensics and consulting at Integreon, a provider of legal and research solutions, e-hoarding becomes even more serious when your organization faces a lawsuit. "During the discovery phase, if you don't have your data properly classified and legal teams are handling a bunch of information that is not relevant to the case, you can spend millions on e-discovery," he says.

Fehrman advocates having not just data retention policies, which many organizations already have, but also data disposal policies.

Besides legal troubles, e-hoarding is also creating huge problems for IT and even executives, problems that go well beyond the costs associated with storing and later finding all of that information. According to IBM, the result of exponential data growth is that most organizations operate with serious blind spots.

IBM found that 1 in 3 business leaders frequently make decisions based on information they either don't have or don't really trust. Shockingly, 1 in 2 business leaders admit that they don't have working access to the information they need to do their jobs.

Business leaders and knowledge workers usually know they have the data they need somewhere, but they can't put their finger on it. They don't know how to find it, and if they do find it, they're not sure how current or accurate it is.

"The problem as I see it is the explosion of unstructured data, or data that is not stored in a relational database," says Chris Davidson, VP and manager of open systems administration for Trustmark National Bank.

As data grows, the chore of backing up critical data becomes more costly and complex. Before Davidson modernized it, Trustmark's backup and recovery strategy was a decentralized, inefficient and largely manual process. The bank's backup solution — IBM Tivoli Storage Manager (TSM) — didn't have an intuitive reporting mechanism, so the bank's backup administrators would take the raw data produced by TSM and manually keep track of the organization's hundreds of systems and their backup status on spreadsheets.

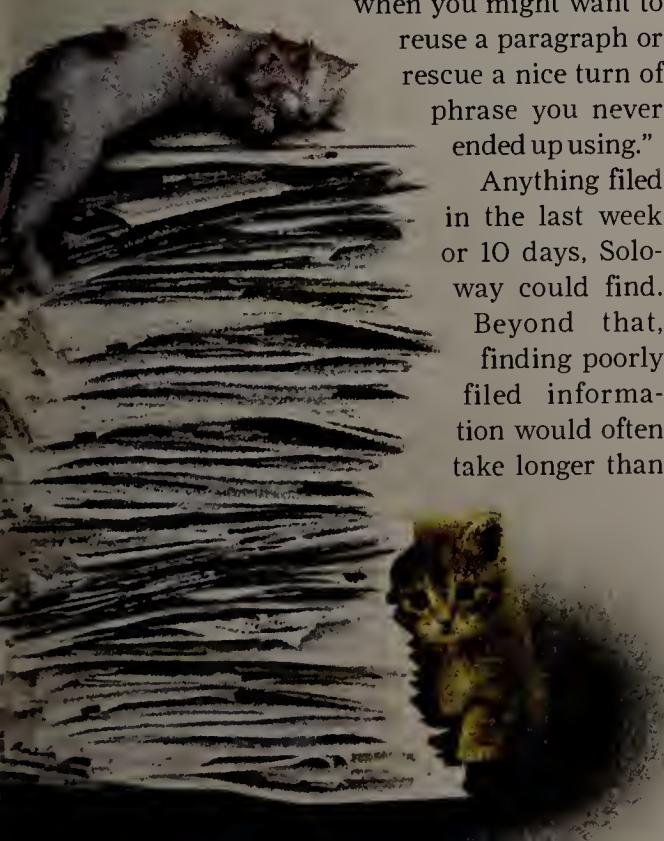
With only a handful of servers, this approach was manageable, but as Trustmark grew, IT administrators started spending as much as 40 hours per month on reporting.

Davidson eventually deployed an automated backup manager from Aptare. Davidson estimates that by automating the backup and reporting process, Trustmark is now saving \$18,000 per year in recovered productivity, \$60,000 per year in hardware costs (through a more efficient backup architecture) and \$1,500 per year in streamlined auditing.

Of course, automated backup isn't the only solution most organizations will need to tame their data problem. A range of technologies can help, including the obvious ones, such as data mining, e-discovery and data governance tools, and less obvious ones, such as data loss prevention tools.

In fact, DLP tools may be a great place to start. As DLP tools classify important data that the enterprise must protect from leakage and IP theft, anything that falls outside of that "protected" classification is a good candidate for deletion. ■

Based in Santa Monica, Calif., Jeff Vance is the founder of Sandstorm Media, a copywriting and content marketing firm. He can be reached at jeff@sandstormmedia.net or http://twitter.com/JWVance.





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BROCADE

TOOLS

Yet more DSL woes

For the last few weeks I've been wrestling with my new AT&T U-Verse DSL service outlined my travails here in Gearhead after which you might have assumed all would be well, that AT&T would have pulled out all the stops and sorted out my issues. Alas, this week I'm no happier and, apparently, neither are many of you.

So, where am I today with my DSL? I'm not sure. Last week they declared my line was good for 6Mbps, then they decided it wasn't and dropped it to 3Mbps. Not content to rest on their laurels, yesterday they changed their minds once again and decided it would work at 6Mbps. They have also swapped which pair to the central office I'm using, changed my in-house wiring, theorized that "line taps" were the problem and, I presume, removed them and — sigh — we're still not in a happy place.

I just checked my connection using speed-test.net and discovered that my speed down is a pathetic 0.57Mbps and my speed up is — be still my beating heart — 0.04Mbps.

And then there's Wi-Fi. For no obvious reason, the Wi-Fi access point in the DSL modem (a Motorola NVG510) started to refuse connections, which only a restart of the Wi-Fi service could fix. Yesterday the techs replaced the modem and yesterday afternoon the same thing happened again!

Over this same period the average latency to various sites I'm monitoring with PingPlotter have increased by 20 to 30 times over what I was seeing three days ago! For example, I'm seeing a ping time for att.com of over 1,000ms instead of the

45ms it used to be (which wasn't particularly great anyway).

Anyway, a positive flood of ISP horror stories has been pouring in. Reader Ben Myers wrote, "I read your DSL column in the latest Network World, and I marvel at the complete ineptitude of AT&T in managing your DSL connection. I provide support for a lot of Verizon DSL customers around here, both business and consumer, and Verizon seems to have gotten it right with DSL. Have you ever considered changing ISPs? Is it possible in the remote wilds of Ventura, CA? Does anybody offer cable Internet?"

Cable? While it seems to be somewhat more reliable than DSL, I've heard many horror stories of how over-subscribed cable service can be with, for instance, significant slowdowns when the neighborhood children get back from school. Even so, maybe I should try it.

Luckily, I don't have a contract with AT&T (so there's no early termination fee) so I could try out my local Time Warner cable service (Charter is the cable provider at the other end of town ... yep, that's competition for you). I could have a 10Mbps down, 1Mbps up service for \$30 per month, which compares favorably to AT&T's U-verse "Elite" service that provides 6Mbps down and 0.5Mbps up and costs \$25 per month. I must poll my neighbors to see what they're using and if they are happy.

Keep writing in with your tales of how your ISP has made your life more interesting and your thoughts on DSL vs. cable. As for my existing service ... I'm praying it will get fixed before the next Gearhead. ■



Mark Gibbs' Gearhead

Yes, I have considered switching ISPs but what choices do I have? Only AT&T offers DSL service in this area. Satellite? It's too expensive and the latency is brutal ... **that would be a desperation choice.**

Yes, I have considered switching ISPs but what choices do I have? Only AT&T offers DSL service in this area. Satellite? It's too expensive and the latency is brutal ... that would be a desperation choice.

Gibbs is on his digital knees in Ventura, Calif. Send your tales of tech torment to gearhead@gibbs.com and follow him on Twitter (@quistuipater) and on Facebook (quistuipater).

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THE
SCOOP

Xerox Mobile Scanner

by Xerox, about \$250

► **What it is:** This portable scanner is the updated model of the Visioneer Cordless Color Scanner, which I reviewed last year (Xerox licenses the Visioneer technology for this product). The battery-operated scanner lets you scan photos and documents (JPEG for photos, PDF for color or black-and-white documents) quickly and easily without the need to be connected to a computer—images can be stored directly to a USB thumb drive (or external USB hard drive) or an inserted SD memory card. The system comes bundled with a 4GB Eye-Fi card, giving the scanner Wi-Fi connectivity.

Other features include a carrying case, bundled software and a recharging/data USB cable (as well as wall adapter) to recharge the unit's battery.

► **Why it's cool:** The Wi-Fi connectivity via the Eye-Fi card means you can scan things directly to the cloud, via the Eye-Fi website. From there, you can share images to social sites such as Facebook, Flickr, Picasa, etc. (although it's pretty easy to just copy photos and documents over from the SD card, but some people like having one less step to manage).

Like the Visioneer scanner I tested last year, the Xerox Mobile Scanner doesn't need to connect to a PC via USB in order to scan—for users who have lots of older photos that they'd like to scan, having a tethered scanner seemed an unnecessary complication. With this unit, you can scan a shoe box full of old photos in minutes, and the Wi-Fi card can upload them without any extra effort (I'd suggest editing them later before sharing, however). For Facebook users looking to bolster their new Timeline, for example, this is a great way to quickly add those images to the site without having to use a bulkier desktop scanner.

I also found the direct-to-PDF



functionality handy. I was able to feed all of my tax documents quickly through the scanner (if you feed it quickly enough all of the scans end up in one PDF instead of multiple files) instead of individual scans on a flatbed scanner. The choice of color or black-and-white PDF scanning was appreciated as well, and switching between scanning options (PDF or JPEG) by pushing a single button was quite simple to do.

Another nice touch is the addition of smartphone apps (DocToMe)—you can scan a photo with the unit and then view the image on an iPhone, iPad, iPod Touch or Android smartphone. This can be useful if you need to view PDF documents quickly and easily on your device (Eye-Fi also makes a card-viewing iPhone app for photos, but not PDFs).

► **Some caveats:** The biggest issue I had

was with the Eye-Fi card; configuring it to connect to my home Wi-Fi network came with some hassles, and getting the card to work in Direct Mode (in areas where you didn't have Wi-Fi, you could still, in theory, transfer images and documents via the smartphone app) was difficult. Based on these issues, it's possible I had a defective Eye-Fi card.

On the scanner itself, the only issue I can see is the \$250 price tag; if Xerox could get that down to \$150 or less, this would make a great gift for non-techie users; otherwise, it's an office device that can be shared with employees.

► **Bottom line:** Scanning made simple for those with lots of old photos they'd like to digitize, or the mobile worker who wants to reduce paper overload (business cards, receipts, etc.).

► **Grade ★★★★½ (out of five).**

Shaw can be reached at kshaw@nww.com.

The future of end-user computing: Two visions

Manage the point of access



Brian Gammage, chief market technologist at VMware

difficult to adapt. In doing so, they will embrace approaches that change the relationship between business results, technology assets and how users work:

- Ownership of applications and devices will become increasingly optional for organizations and users.
- Technology diversity will become the norm, not an exception.
- Operational cost and complexity will fall sharply.
- The focus of management will shift from platforms to applications.

These changes will not only occur through the supply of new capabilities, but also because our businesses and economies require it. Thanks to the rapid emergence of cloud-based approaches, most organizations already expect this. They also expect the transition to be a journey, completed in multiple steps.

Some facets of end-user computing today are simply no longer sustainable:

- Asset-level processes: Configuring, maintaining and securing each device, platform or application through a separate process is a non-scalable approach when diversity in all three is increasing — it creates barriers to adoption of assets and drives a “one-size-fits-all” mentality.
- High operational costs: End-user computing is one of the highest cost areas in IT, with most expense driven by operational overhead.
- Zero marginal benefits: Most investment in

END-USER COMPUTING IS UNDERGOING ITS most significant transition in 30 years as focus moves from technology to the business results it delivers. This shift is driven by market maturity and by the realization that current approaches are no longer sustainable. Add the explosion in expectations for mobility, collaboration and user choice and we see IT organizations today caught between a rock and a hard place: seeking to maintain the function of what they have now and responding to new demands.

Over the next decade, IT organizations will throw off the shackles of the static management methods that have made end-user computing environments so costly to run and

It's all the personal cloud



John Fanelli, vice president of product marketing, enterprise desktops and applications at Citrix

THE FUTURE OF END-USER COMPUTING is here today ... and it's in your pocket. And your house, your office and your favorite seat on the 8 a.m. train. It's wherever you are.

The future of end-user computing begins and ends with you. There is little debate that mobile work styles powered by the cloud are rapidly becoming the new normal for computing. This does not mean the personal computer is going away — it simply means that it is becoming part of something much bigger. Something that parallels the transformation the PC itself ushered in some 30 years ago. At Citrix, we believe a new “PC” is taking center stage — the “Personal Cloud.”

The personal cloud represents a new way of interacting with information that is free from the limitations of traditional PC-centric computing. It provides secure, instant access to the apps, data and people necessary to get work done from any device, anywhere. It means that we don't have to leave our child's soccer game and drive to the office to get meaningful work done. It means we can collaborate with teams of engineers across multiple sites and see, speak and engage with one another in high-definition. It also means that we can create, review and edit documents, then share, sync and secure those files on any device.

IT, however, is struggling to reconcile the conflicting priorities of maintaining control through standardization versus enabling users with the freedom that consumerization offers. Today's systems, designed and built for the PC era, are based on the assumption that most people work in an office using a corporate-issued PC that is primarily attached to a wired network. Most of the current systems and policies are built on this assumption, making exceptions like mobile users and personal devices difficult to manage. In the cloud era, a new IT is emerging. Instead of treating mobile work styles as an exception, successful IT leaders will design systems and policies assuming that everyone is mobile, using multiple personal devices connecting over wireless networks.

Whose vision is better?

Citrix

57%

VMware

43%

Cast your vote and see comments at tinyurl.com/7yc7spc

► See **VMware**, page 24

► See **Citrix**, page 24

► **VMware**, from page 23

end-user computing is consumed in updating hardware and operating systems — by the need to replace end-of-life assets, rather than embracing new capabilities that deliver productivity or revenue benefits. The money is spent to stand still, not to move forward, so end-user computing is seen as a “cost of doing business.”

All these facets are driven by how we manage end-user computing today. Only by standardizing management processes and tools can we contain operational costs and maintain acceptable levels of security.

Today we standardize the assets deployed. This drives a one-size-fits-all approach to how users are equipped, which in turn leads to inertia and high costs of change. Implicitly it drives a desire IT's behalf to resist change — otherwise cost and complexity will rise.

In the future, processes and tools must be standardized across more diverse assets so applications of different types can be accessed and managed in the same way, irrespective of the type of device. This will break the inertia of “configuration standardization” and allow us to accommodate change, rather than resist it. Achieving this critical goal requires that, instead of managing the devices used and the resources accessed, we manage from the point at which resources are accessed.

ONLY BY STANDARDIZING MANAGEMENT PROCESSES CAN WE CONTAIN OPERATIONAL COSTS AND MAINTAIN ACCEPTABLE LEVELS OF SECURITY.

New applications will exploit Web-based or SaaS-type approaches and be connected directly to the hub with no cost of integration. As applications are replaced and upgraded, they will move from the legacy container to the hub, driving reductions in operational costs.

This approach will have far reaching implications. It will:

- Enable more granular control and audit.
- Expose direct associations between the cost of resources and the results they deliver, changing perceptions of marginal benefit.
- Significantly reduce the costs of new applications.
- Eliminate traditional barriers to non-owned and non-standard devices.
- Drive dramatic improvements in elasticity, simplifying the processes of business change.

In the long run, the end-user computing focus will shift from the technology being used to the results delivered. ■

VMware is the leader in virtualization and cloud infrastructure solutions that enable businesses to thrive in the cloud era. Customers rely on VMware to help them transform the way they build, deliver and consume IT resources in a manner that is evolutionary and based on their specific needs.

► **Citrix**, from page 23

They will assume that apps will increasingly be delivered as cloud services — whether private or public — and that many of those apps will be micro-apps because simpler is better, faster and cheaper. And they will optimize for self-service apps, delivered through enterprise app stores, where every worker's files and apps are easy to access, share and secure on any device.

By designing and building to this new set of assumptions, something amazing happens — when employees do come into a physical office, sit down at a company-owned PC and connect to a corporate network, it doesn't cost one incremental dollar more. Those services are effectively free because IT has designed everything assuming a mobile work style. This approach also means that IT no longer has to place bets on which devices, platforms or app types are going to win — in the cloud era, “any-ness” becomes the new standard.

At Citrix, we see the future of end user computing being comprised of three “PCs.” “Personal clouds” are emerging to enable a highly productive, mobile work style, and “private clouds” and “public clouds” are converging to ensure that every IT service will one day become a flexible, powerful, cloud-based service.

The personal cloud is where the user's collaboration tools, data and applications reside and are accessible across any device. Key technology components of the personal cloud include:

- A universal client like Citrix Receiver that enables true device independence and a high-definition user experience.
- Real-time collaboration with high-definition voice, video and document sharing as provided by Citrix GoToMeeting and HDFaces.
- Sharing, syncing and securing of files on any device from a robust service like Citrix ShareFile.

The converged private and public clouds must contain the following technologies to deliver on the promises of the cloud era:

- A single point of control that unifies the provisioning and security of Windows, Web, SaaS and mobile apps through an enterprise storefront like Citrix CloudGateway.
- Desktop and app virtualization technology like Citrix XenDesktop, that transforms Windows desktops and apps into an on-demand service available to any user, anywhere, on any device.
- A bridge to public clouds that transparently enables infinite data center capacity, like Citrix CloudBridge.
- Cloud orchestration technology such as Citrix CloudStack and CloudPortal, that enable building Amazon-style clouds services within an organization's data center.

Mobile work styles are here today and here to stay. Citrix is already delivering on the concepts discussed above. Underlying all of our efforts is our core philosophy of optimizing for the end-user experience. During our 23-year history, we have been focused on delivering the best possible user experience, and we will continue to lead with that goal in the post PC/3 PC era. Oh, and you don't need to buy bigger pants. The future of end-user computing fits quite nicely in the pockets you have today. ■

Citrix Systems is transforming how people, businesses and IT work and collaborate in the cloud era.

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IN THE CLOUD ERA, “ANY-NESS” BECOMES THE NEW STANDARD.



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BY BARRY NANCE

A network that measures downtime in millions of dollars per minute (or per second!) needs a serious, enterprise-level network management tool. Nothing less will do.

The ideal network management platform accurately discovers devices, computers and applications on the network, works on networks of any size and uses computing resources frugally (after all, it performs no data processing — it's there to watch over the network).

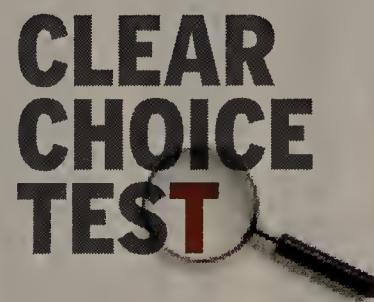
It can work within the framework of a global directory (LDAP, for example). It graphically depicts the entire network, subsets of the network and individual devices. It monitors the status and health of every device or computer on the network. It can glean its data from a variety of sources, including agents, probes, SNMP-enabled devices, log files and Windows performance files.

That's not all. It needs to work as well with IPv6 as it does with IPv4; accept and use complex descriptions of thresholds; and can send alert notifications via email, pager or text message to different individuals or groups depending on the nature of the problem, and it can escalate these notifications when the problem persists.

It also must perform root cause analysis to identify a problem device or computer that's causing a cascade of network error messages. It can correct some problems automatically by restarting a process, resetting a port or running a script. It works within virtual environments and cloud-based environments. It integrates with help desk software and with other monitoring tools. It produces useful, easy-to-understand and timely reports. It's highly scalable and reliable. And the ideal network management is easy to use.

We invited four enterprise-level network management software vendors to submit their best products for review in our Alabama lab. IBM sent us Tivoli Netcool/OMNIbus and Tivoli Network Manager IP Edition. CA Technologies sent us CA eHealth and CA NetQoS Reporter Analyzer. And HP sent both the Windows and Linux versions of its Automated Network Management Suite. BMC initially accepted our invitation, but then offered us "a guided tour of the products in our environment" instead of sending us a product to review.

Picking a winner among these three



network managers is impossible. Each one is a sophisticated, mature and highly capable tool for achieving maximum network availability, uptime and performance. If you have a serious network, any one of these three network managers will help you quickly solve network problems and will save your organization megabucks.

HP Automated Network Management Suite: Flawless, scalable, modular

HP's Automated Network Management Suite's high points are its modularity, its ability to monitor service level compliance and its automation of many of a network engineer's daily tasks — i.e., it's scalable, it helps track actual vs. expected performance and it saves time. As we tested, we didn't find any drawbacks in Automated Network Management Suite.

Automated Network Management Suite consists of Network Node Manager (NNM) and a spate of components and Smart Plugins (SPI), including HP Network Automation, NNMi Integration Enablement, NNM iSPI Network Engineering Toolset, NNM iSPI Performance for Metrics, NNM iSPI Performance for Traffic and NNM iSPI Performance for Quality Assurance, NNM iSPI Performance for Traffic, NNM iSPI for IP Telephony, NNM iSPI for IP Multicast and NNM iSPI for Multiprotocol Label Switching (MPLS), all under an umbrella of network automation. Network Node Manager monitors for faults and network availability, while the performance-related plug-ins gather utilization data and monitor for specific devices, protocols and applications.

Automated Network Management Suite accurately discovered our network (noting all our network devices, servers and virtualized environments), tracked device status, processed SNMP alerts, graphically displayed our network, alerted us to problems, fixed problems automatically, gathered statistics and produced useful reports.

HP supplies more than 2,000 Management Information Bases (MIB) with

Automated Network Management Suite. These cover a wide variety of network equipment from over 50 major hardware vendors, equipment that includes routers, switches, bridges and repeaters.

Automated Network Management Suite captured some Layer 2 data, but for the most part it mapped Layer 3 details. Just a few of the myriad details were utilization and error percentages, total packets by category and by protocol, retransmits, server memory utilization and full-duplex utilization percentage.

Automated Network Management Suite collected network health data, analyzed the stored device status and event data and reported results in useful charts and graphs. The system's root-cause problem analysis was especially helpful in zeroing in on a specific device that was causing an outage or performance problem, while its path-analysis capability was similarly helpful in pinpointing problems and performance degradations involving network pathways and linkages.

Automated Network Management Suite's automatic baseline feature set alarm thresholds for us by analyzing collected device status and event data, thus giving it the ability to more realistically detect exceptions, faults and errors. After it created a baseline for our network, we manually added a few thresholds of our own. Automated Network Management Suite thereafter generated prompt and highly informational alarms, via pager or email, to notify us when the thresholds were exceeded.

Automated Network Management Suite's distributed architecture scales well to handle larger and more complex network environments. Automated Network Management Suite even monitored itself to ensure it's running normally. It paged our administrator and sends email alerts if the self-monitor finds, for instance, that Network Node Manager, or its server, had died. Automated Network Management Suite can initiate corrective actions, such as restarting a background process or resetting a router port.

The Web browser-based user interface is responsive, thoughtfully designed and highly configurable. Automated Network Management Suite provides a central console for controlling multiple Network Node Manager instances. This central console consolidated event management, performance monitoring and automated alert processing in the lab. Our network administrator used its high-level Visual Basic Script-like language



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NETRESULTS

| Product | IBM Tivoli Netcool/OMNIbus and Network Manager 8.2 | CA eHealth and NetQoS Reporter Analyzer 6.2 | HP Automated Network Management Suite 9.10 |
|---------|---|---|--|
| Company | IBM | CA Technologies | HP |
| Price | Starts at \$18,000 | Starts at \$50,000 | Starts at \$3,000 |
| Pros | Handles tens of millions of events per day; quickly and accurately distills root causes | Supports myriad diverse device types; does predictive performance analysis; offers a wealth of useful reports | Modularity, ability to monitor service level compliance and automation of many daily tasks |
| Cons | Browser-based user interface was somewhat cumbersome and not as responsive as we'd have liked | Higher than expected consumption of computing resources | None |

to customize the Automated Network Management Suite's behavior and display. The console dashboard's network health indicators were helpful and informative.

For business-oriented service-level agreements (SLA) we established, Automated Network Management Suite tracked our transactions, their network travel, their processing at the server and their storage in a database. Automated Network Management Suite gave us availability and response time details, and it alerted us when any of our SLA parameters were exceeded.

Automated Network Management Suite runs on Windows Server 2003, Windows Server 2008, Red Hat Enterprise Linux and Solaris.

IBM Tivoli Netcool/OMNIbus: Highly scalable, excellent problem-solving abilities, highly configurable and integrates well with other systems

Tivoli Netcool/OMNIbus consolidates network status and health data from multiple network domains and subnets. Netcool/OMNIbus supervises and manages network events across a network of virtually any size and complexity. Netcool/OMNIbus gets much of its data from Tivoli Network Manager IP Edition, which collects and stores data from network Layers 2 and 3.

Tivoli Network Manager's stored network knowledge includes information about both physical and logical network connections. It accurately and helpfully recognized, for instance, VPN, virtual LAN, asynchronous transfer mode (ATM), frame relay and MPLS connections in addition to our physical, port-to-port device connections.

Together, Netcool/OMNIbus and Network Manager gave us a clear and accurate picture of the test networks we asked them to manage, no matter how complex. Through Netcool/OMNIbus and Network Manager, we configured quite sophisticated threshold tests, such

as "Emit an alert if the San Francisco WAN link's utilization exceeds 5% on Saturdays and Sundays, 20% after 8 p.m. during the week, 50% during weekdays or 75% at 10 a.m. and 2 p.m. on weekdays."

For reliability's sake, Netcool/OMNIbus and Network Manager monitored themselves and restarted automatically when we artificially caused a monitoring/management component to fail.

Netcool/OMNIbus and Network Manager support current and evolving standards, including ITIL, Cobit, eTOM, IPv4 and IPv6, and uses FIPS 140-2 approved cryptographic providers.

To our delight, Netcool/OMNIbus and Network Manager worked well in both mixed and pure environments when we confronted them with IPv4 and IPv6 packets.

We also noted that network-intensive organizations that use an operational support system (OSS) to track network inventory, the provisioning of services and the configuration of network components will appreciate Network Manager's ability to integrate with an OSS.

Tivoli Netcool/OMNIbus and Tivoli Network Manager excelled at handling millions and even tens of millions of events per day in our tests. Moreover, for each network problem we artificially induced, Netcool/OMNIbus and Network Manager quickly and accurately sifted through and analyzed the events to distill root causes for us. Netcool/OMNIbus and Network Manager saved us the equivalent of hundreds of hours of network troubleshooting when it pinpointed the actual problem devices that were responsible for a cascade of network error messages. Netcool/OMNIbus and Network Manager even located a fault we caused in a backup data path. If the primary path had failed, the fault would've kept the backup path from taking over for the primary data path.

On the downside, Netcool/OMNIbus' and Network Manager's browser-based user

interface, Netcool/Webtop, was somewhat cumbersome and not as responsive as we'd have liked. Netcool/Webtop is a Java application that displays dashboards of maps, charts, tables and event lists. To its credit, when we logged on as super-administrators, we could easily configure Netcool/Webtop to show just those dashboard components we wanted to see.

However, the Netcool/Webtop user interface was a bit sluggish. In comparison, we've seen some complex Ajax-enabled (i.e., JavaScript-based) Web browser interfaces that were snappier and more responsive. IBM provides additional graphical tools in the form of Netcool/Desktop, a native Motif- or Windows-based client that presents an alternative view of network activity. Like Netcool/Webtop's, Netcool/Desktop's display is highly configurable.

IBM supplies more than 1,000 software-based Netcool Probes with Netcool/OMNIbus and Network Manager. These are lightweight agents we easily deployed across the far reaches of our network.

Netcool Probes stand watch over a wide variety of network devices, servers and server processes, and they report status and health information to a central console. We also noted that organizations with vertical-market business applications can painlessly create Netcool Probes that can monitor the running of the business application to alert an administrator when, for example, the application crashes or it begins consuming excessive CPU resources. IBM ships more than 600 MIBs with Netcool/OMNIbus.

Netcool/OMNIbus works hand-in-glove to automatically open and close trouble tickets in help desk trouble-ticket-tracking software such as Siebel, Peregrine and of course Tivoli Service Request Manager.

Netcool/OMNIbus and Network Manager run on Solaris, HP-UX, AIX, Windows Server 2003, Windows Server 2008, Red

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CA eHealth and NetQoS ReporterAnalyzer: Powerful predictive analysis, excellent reporting features

EHealth's and NetQoS ReporterAnalyzer's strong suits are their ability to handle diverse device types, their ability to do predictive performance analysis and the wealth of useful reports they offer. If eHealth and NetQoS ReporterAnalyzer have a weakness, it's their consumption of computing resources. You might need a somewhat faster server, for instance, on which to run eHealth and NetQoS ReporterAnalyzer.

EHealth is CA's enterprise-level network monitoring and management tool for finding and fixing network faults, while NetQoS ReporterAnalyzer is a network traffic analysis tool that reveals how a particular type of traffic or a specific network node are exceeding thresholds.

At an interval we could configure, eHealth polled our network devices to collect status and health data. EHealth then used a patented set of highly complex algorithms to know which part of the network was failing or was likely to fail soon. This predictive analysis feature is a godsend for organizations that can little afford network downtime and that want to proactively stay ahead of potential network problems.

When eHealth detected a threshold breach that we created, it sent us email and paged us. If we ignored the initial alerts, it escalated matters by emailing and paging a second tier of people. Alerts can be triggered for hard outages such as loss of communication with a device or when, for example, a WAN link exceeds a threshold because network utilization is higher than, say, 75%.

We could express quite complex thresholds with eHealth, which used CA's Time-Over-Threshold (TOT) or Deviation-From-Normal (DFN) algorithms to keep false alarms to a minimum. We could specify that we wanted to be alerted if network utilization exceeded a threshold even once, or we could specify that we wanted to be alerted only if high network utilization persisted for a specified period of time.

EHealth's dashboard display provided real-time status information for the network. EHealth also has a central console user interface that graphically depicts the entire network or any portion of it. Clicking on a yellow (minor alert) or red (major alert) network device drills down through eHealth's data

to reveal the nature of a problem as well as details about the problem. We liked that we could generate instant reports to help document the problem.

EHealth's reports are informative, easy to understand and easy to produce. We used its reports to help troubleshoot problems, identify unusual network behavior for future investigation, document SLA compliance and identify trends for capacity-planning purposes. Through the simple-to-use reports interface, we could select the network elements or groups of elements we wished to document, specify a chart type (Line, Bar, Stacked Line) and choose a calendar window such as "Today" or "Previous 7 Days." We could also set up custom date and time ranges for our reports.

EHealth's At-a-Glance Reports were our first line of defense when we needed to document a problem so we could collaboratively share the nature of the problem with other network engineers. At-a-Glance Reports provide a high-level, quick view of key data, including network utilization, server utilization (CPU, memory or hard disk), the identity of a failed application and network connectivity errors.

We found eHealth's Trend Reports made quick work of capacity planning chores. For all or any part of the network and for whatever time period we wished, we could configure and schedule reports that showed exactly the device, computer, application or network behaviors we wanted to document. We used these reports initially to produce a baseline of the network. Then, over time, we used these reports' graphs and charts to precisely identify utilization trends that revealed the upgrades we should plan for. We also set up a number of tabular reports to document uptime and availability as well as provide utilization statistics for billing (chargeback) purposes.

We particularly liked eHealth's report customization features, which let us produce, for example, trend reports for a specific user group and/or specific set of network resources, such as databases.

Impressively, CA includes more than 5,000 MIBs in eHealth.

EHealth and NetQoS ReporterAnalyzer run on Windows Server 2003 and Solaris.

Conclusion

All three of these network managers — IBM Tivoli Netcool/OMNibus and Tivoli Network Manager IP Edition, CA eHealth and CA NetQoS ReporterAnalyzer and HP Automated Network Management Suite — are top-of-the-line, mature and highly capable tools

How we did it

We evaluated each product in several different areas: discovery and enumeration of devices and computers, support for a variety of device manufacturers and device types, global directory integration, graphical depiction of the network, monitoring of network node status (availability), performance and health, alerts and notifications when network problems occur, automated corrective actions, maintenance of trouble tickets (or integration with a help desk tool), support for virtualized environments and the production of useful, informative reports.

In particular, we wanted these reports to establish baselines, show available and unavailable devices, log device availability histories, identify trends and help us spot conditions that could result in future network problems.

Our test environment consisted of six routed Fast Ethernet subnet domains that have T-1, T-3 and DSL links to the Internet. We installed the network monitoring software's server component(s) on a four-way HP Proliant computer alternately running Windows 2008 Server and Windows 2003 Server.

The 50 client computers on our network were a mix of Windows XP, Windows 2003, Windows 2008, Windows 7, Windows Vista, Red Hat Linux and Macintosh platforms. Relational databases on the network were Oracle, Sybase Adaptive Server and Microsoft SQL Server. Web servers on the network were Internet Information Server (IIS) and Apache.

for ensuring maximum availability, uptime and performance. ■

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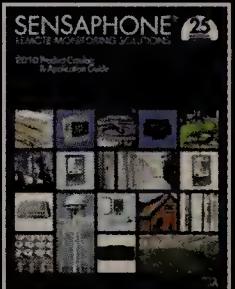
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► iPad, from page 1

LTE cellular support, voice dictation, and a greatly improved rear-facing 5-megapixel camera. It will run iOS 5.1 and be available starting next week. Importantly, both pricing and battery life are unchanged.

"The processor speed, 4G, and improved screen resolutions are all big pluses for the enterprise," says Manoj Prasad, vice president of global applications and testing for Life Technologies, a biotech products company in Carlsbad, Calif., with a growing iPad deployment. "4G, the new processor speed and improved screen resolutions will allow IT to port more backend applications like Oracle, and Siebel to iPad."

But he still thinks the tablet can't yet substitute for laptops. "It still lacks the capabilities to completely replace laptops, making the ROI calculation for iPad difficult," Prasad says.

Others say Apple's priorities for the new iPad means it can be applied in entirely new, emerging areas where laptops make no sense, or at least no sense anymore.

"For an understanding of where the iPad is going it's critical to note the focus on processing power and resolution," says Benjamin Levy, a principal with Solutions Consulting, a Los Angeles firm that specializes in Apple and iOS deployments for enterprise customers. "The iPad is no longer an addition to existing platforms and work structures but is now fully capable on its own and will be defining new ways of working with media in the professional space."

"The new iPad can be seen as more of a tool for digital media than ever before, able to work with high resolution DSLRs [digital single lens reflex camera images] and video, high resolution audio files, high resolution graphics files, etc.," Levy adds.

Although lacking the quad-core CPU that many were expecting, these users see real performance gains with the new iPad.

"The combination of the retina display, the [new A5X] chip and 4G/LTE is going to make the iPad an even more productive business device," says Hugh Owens, director of mobile at MicroStrategy, a business intelligence and analytics software vendor with an extensive iPad 2 deployment, and with iPad customers. "4G will enable users of MicroStrategy Mobile [the company's iOS application] to

pull down analytics even faster, and our native app is already positioned to take advantage of the A5X chip for faster and more compelling rendering."

"Overall, the new iPad is a significant upgrade. Apple is going to sell a boatload of these," says Derick Okihara, IT technician at Mid-Pacific Institute in Honolulu, where he oversees the iPad and iPhone deployments. "In our environment, having a solid camera capable of 1080p video, faster graphics for apps, and the high resolution display, make the iPad that much more useful, especially for students."

our students, the value for what you can do with the new iPad and [its] associated cost is much more attractive than it was with the first iPad announcement," Saeks says.

Most of these users agreed they see no IT-specific implications in the new iPad, at least yet. "I'm not seeing any challenges to support the new devices," Saeks says.

One issue that's been emerging over the past two years is the need to redesign enterprise Wi-Fi networks for pervasive connectivity, and greater capacity, within the enterprise, as more mobile devices show up, either corporately- or personally-owned.

The new iPad with its support for high-definition video and, if Levy is right, for a new generation of media-rich corporate apps and workflows, will accelerate this. IT groups will have to pay more attention to using the 5 GHz Wi-Fi band, and remapping access point locations to support shifting groups of users with more than one Wi-Fi equipped mobile device.

"I'll have to take a deeper dive into iOS 5.1," says James Gordon, vice president of IT at Needham Bank, a small

community bank in Massachusetts that has deployed iOS devices among a majority of its staff and the board of directors.

Apple's decision to cut the price of the iPad 2 by \$100, bringing the entry-level price to \$399, may have a significant impact on deployments. "This opens up possibilities, especially in education markets with a lower buy-in price point," says Okihara. "\$100 x 1,000+ [units] is significant."

Levy agrees. "By lowering the price on the iPad 2 while bringing advances into the new iPad, Apple is able to deliver new technology and features quickly to those who want them right away, while removing some of the barrier of entry to those who don't yet have an iPad," he says.

Gordon was hoping the rumors of a quad-core CPU were true. And at Life Technologies, where a lot of content is in Adobe Flash, the continued and apparently eternal lack of iOS support for that technology remains a complaint.

Prasad at Life Technologies also says he'd like to see direct video output for iPads.

"The bar for tablets and mobile computers has been set very high [with the new iPad]," Gordon says. ■

iPads: Keep getting better

| | iPad | iPad2 | The new iPad |
|----------------|--|--|--|
| Screen | 9.7 inches, 1024 x 768 pixels, 132 pixels per inch | 9.7 inches, 1024 x 768 pixels, 132 pixels per inch | 9.7 inches, 2048 x 1536, 264 pixels per inch |
| Processor | Single core A4, 1GHz | Dual-core A5, 1GHz | Dual-core A5X |
| Storage | To 64GB | To 64GB | To 64GB |
| Camera | None | Back/front | Back/5-megapixel front |
| Connectivity | 3G | 3G | 4G |
| Starting price | \$499, \$699 (3G) | \$499, \$629 (3G) | \$499, \$629 (4G) |

NOTES: CURRENT iPad 2 pricing: only 1 model, 16-Gbytes storage, Wi-Fi version: \$399, add 3G: \$529
Original iPad is NOT FOR SALE on the Apple website.

Levy sees camera applications that go beyond snapshots and home videos. "The camera improvements will be very useful, especially in custom apps for data entry, barcode reading, situation reports and documentation," he says. "Couple that camera with a decent custom app and many [enterprise] workflows can be changed for the better."

The new iPad is now more clearly, and effectively, a platform for creating new kinds of apps, and content, exploiting images, video, high-definition audio, in new ways, according to Randy Saeks, network manager, Northbrook/Glenview School District 30, Northbrook, Ill., another iPad site.

"What I see in the announcement today is really showing that an iPad isn't just a consumption device but has the ability to create really rich, engaging content," he says. "With a lot of the [new] app updates and announcements — iMovie, iPhoto, the iWork suite, as well as what is added to the hardware with a great display and improved camera — it opens the door for how they can be used in classrooms and creative environments."

"Especially with looking at [the question of] what kinds of devices to put in the hands of

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BACKSPIN | BY MARK GIBBS

Beware the eye in the sky

LAST WEEK'S column about The Google and its new privacy policy got quite a response, ranging from "I don't get it, what's the fuss?" through to "I don't care, I have nothing to hide," and, "It's been pretty obvious for years where this was all heading but very few people bothered to sound the alarm ... until now when it's too late."

To the first and second groups, all I can say is good luck, the government will be stopping by to tattoo a QR code on your neck.

As for the last comment, I sort of agree that it's all gone too far, but whether it's too late is a matter of debate. For it to be too late you'd have to assume that there is no more personal privacy to be lost, that the full scope of how you can be sliced and diced by the government and the corporations has been achieved. This is, thankfully, not the case.

So, what might erode your remaining privacy? In the seemingly endless parade of new threats, there's an issue that has been brewing for some time that's starting to become really big: drones that carry surveillance gear in the form of conventional cameras, radar, cellphone eavesdropping systems, thermal imagers and UV cameras.

Until recently the deployment of sophisticated drones was pretty much limited to the military, but prices have fallen so much that battlefield tech has come back to the homeland. For example, as *The LA Times* reported (see story at tinyurl.com/6nb2npm) at the end of last year, agencies such as the U.S. Customs and Border Protection, the FBI and the Drug Enforcement Administration now own or have access to drones for use on American soil.

Along with these platforms comes increasingly advanced surveillance subsystems such as the Gorgon Stare (tinyurl.com/6loexb6),

which will eventually provide real-time monitoring of areas the size of entire cities!

Along with this "big boy" gear there's been an explosion of drone-type products in the civilian market. Consider the Draganflyer X8 (tinyurl.com/2ermcts), a sophisticated remote-control helicopter. This system is capable of hoisting a variety of cameras and other devices and is as loud at three feet away as the dial tone on a phone ... all for around \$25,000.

What concerns many people is that having these kinds of surveillance systems without any kind of acceptable use policy will almost certainly lead to abuse. In a Stanford Law Review article titled "The Drone as Privacy Catalyst," M. Ryan Calo, director for privacy and robotics, Center for Internet and Society, commented:

"Citizens do not generally enjoy a reasonable expectation of privacy in public, nor even in the portions of their property visible from a public vantage. In 1986, the Supreme Court found no search where local police flew over the defendant's backyard with a private plane. A few years later, the Court admitted evidence spotted by an officer in a helicopter looking through two missing roof panels in a greenhouse. Neither the Constitution nor common law appears to prohibit police or the media from routinely operating surveillance drones in urban and other environments."

So along with surveillance video, unauthorized wiretaps, cellphone location and all of the other intrusive technologies, we can now expect to be spied on from above as well. Unless we get real privacy laws in place, the only real privacy will be when we're dead. ■

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NETBUZZ | BY PAUL MCNAMARA

If the Dow had chosen Apple instead of Cisco

AFTER THE Dow Jones industrial average hit 13,000 recently, *San Jose Mercury News* columnist Mike Cassidy made an impassioned case for including Apple in the index, a position he buttressed by citing an analysis by Adam Nash of Greylock Partners.

No one, including Cassidy and Nash, believes that Apple's inclusion will happen any time soon, if ever. However, it could have happened — at least hypothetically — back almost three years ago now when Cisco was chosen to replace General Motors in the Dow lineup of 30 companies.

Greylock's Nash wrote last month on his personal blog: "The question I explored was simple — what would have happened if [Dow Jones] had replaced General Motors with Apple on June 8, 2009 [instead of with Cisco]. After all, Apple was up over 80% off its lows post-crash. The company had a large, but not overwhelming market capitalization. The index is already filled with 'big iron' tech stocks, like Intel, HP & IBM. Why add Cisco? Why not add a consumer tech name instead? In fact, there is no readily obvious justification for adding Cisco to the index in 2009 instead of Apple."

What would have happened is that the Dow Jones industrial average — the most widely cited measure of stock market health and a major contributor to general public attitudes toward the economy — would have fared better by roughly the difference between Apple's phenomenal performance and Cisco's anemic one since that time.

Ah, but the idea of Apple (or Google, if you're wondering) being included in the Dow is fanciful at best, as the Dow Jones Indexes' blog attempted to explain on Feb. 8: "Typically a company is added to The Dow only if [it] has an excellent reputation, demonstrates sustained

growth and is of interest to a large number of investors. While it's true that both Apple and Google would certainly seem to meet these criteria, this qualification doesn't necessitate their inclusion in The Dow — nor does their sheer size, although it also weighs in their favor. The Dow's methodology allows for subjectivity, and ultimately stock changes are made at the discretion of the Averages Committee."

So what's the problem? In a word: price. Apple and Google trade at such high prices that their inclusion would skew the Dow both today and historically.

Nash thinks little of that explanation — especially as it applied to Apple vs. Cisco circa 2009 — but he reserves his greater scorn for something other than that discretionary decision: the Dow itself: "Look, I'm just going to say it. The Dow Jones Industrial Average is ridiculous ... a mathematical farce."

Nevertheless, Nash did the math using the rules that Dow Jones uses. Had Apple instead of Cisco replaced GM in 2009, we wouldn't be talking about the 13,000 mark because the Dow would be over 15,000 by now.

Remember two things: A committee made that decision using "subjectivity" and "discretion." And in a presidential election year, nothing matters more than public perceptions about the economy.

That's not to suggest that Dow Jones in any way, shape or form considered the political implications in choosing Cisco over Apple; rather, only that there is certainly the potential for political implications whenever Dow Jones messes with the lineup. ■

Comments and market tips should be directed to buzz@nww.com.

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